



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

OFFICE OF THE
REGIONAL ADMINISTRATOR

APR 21 2008

Mary D. Nichols, Chairman
California Environmental Protection Agency
Air Resources Board
P.O Box 2815
Sacramento, California 95812

Dear Ms Nichols:

We have received the Air Resources Board letter dated April 15, 2008 requesting that EPA flag under our Exceptional Events Rule a PM-10 exceedance which occurred on January 4, 2008 at the Bakersfield Golden State Highway monitoring site, located in the San Joaquin Valley (letter from Karen Magliano, Chief, Air Quality Data Branch, Planning and Technical Support Division, Air Resources Board to Sean Hogan, Manager, Technical Support Office, Air Division, US EPA Region 9). We have reviewed the documentation package and concur with flagging the January 4, 2008 measurement in Bakersfield as exceptional due to a high wind natural event. The Regional concurrence flag will be placed in EPA's AQS database.

Please feel free to have your staff contact Sean Hogan with any questions or comments regarding this information. His contact information is: hogan.sean@epa.gov and his phone number is (415) 972-3261.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne Nastri".

Wayne Nastri
Regional Administrator

cc: Linda Murchison, ARB, PTSD

ATTACHMENT

January 4, 2008 PM-10 Exceptional Event at Bakersfield Golden State Site

On January 4, 2008, the Bakersfield Golden State Highway PM-10 monitor in the San Joaquin Valley recorded a 24-hour concentration of $338 \mu\text{g}/\text{m}^3$, which exceeds the level of the 24-hour PM-10 NAAQS of $150 \mu\text{g}/\text{m}^3$. The San Joaquin Valley Unified Air Pollution Control District (District) has flagged this concentration as a high wind exceptional event and has asked the California Air Resources Board (ARB) to request that EPA add its concurrence to the data flag so that it may be excluded from regulatory consideration.

EPA's Exceptional Events Rule (EER), 40 CFR sections 50.1 and 50.14, specifically allows States to request the exclusion of concentrations that exceed the level of the NAAQS if the State can demonstrate that the concentration recorded was due to natural events such as high winds. The State must demonstrate that the high winds meet the definition of an exceptional event (the event affected air quality, was not reasonably controllable or preventable, was a natural event, and is determined by EPA in accordance with the EER as an exceptional event), establish a causal connection between the event and the measured concentration above the level of the NAAQS, show that the measured concentration was in excess of normal historical fluctuations, and that there would not have been an exceedance of the level of the NAAQS but for the event. This documentation must be made available for public review and any comments received must be included with the State's submittal to EPA.

The State must also show that the public was provided with prompt notification that an exceedance of the applicable NAAQS was expected, provide for public education on how to minimize exposure to unhealthy levels of pollution during events and that appropriate measures were implemented to protect public health. Finally, all procedural requirements of the EER must be met (flagging of data in EPA's Air Quality System (AQS) database, notification to EPA that data has been flagged, and submittal of appropriate documentation as described above). See 40 CFR 50.14 and 51.930; 72 FR 13560 (March 22, 2007).

Public Notification

The District has prepared documentation to demonstrate that this exceedance was due to a high wind exceptional event, posted the document on its website and has asked for public comment on it. The document was posted on the District's website and forwarded to the ARB for its review on February 22, 2008. On February 19, 2008, notices were published in eight newspapers throughout the San Joaquin Valley notifying the public that the District's documentation was available for review and that any comments should be sent to the District by March 24, 2008. The District did not receive any comments from the public regarding its documentation of this high wind exceptional

event. On April 15, 2008, the State formally submitted the District's documentation to EPA and requested that we concur with the District's flags.

Flagging of Data

The District has submitted the PM-10 data from this monitor to EPA's AQS database and has placed the appropriate flags on the data indicating its belief that the data was affected by an exceptional event due to high winds. The District informed EPA and the California Air Resources Board (ARB) of its intention to request that the data be flagged as exceptional on February 22, 2008. On April 15, 2008, ARB requested that EPA concur with the District flags.

The Event Satisfies the Criteria Set Forth in 40 CFR 50.1(j)

40 CFR 50.1(j) defines an exceptional event as an event that:

- Affects Air Quality;
- Is not reasonably controllable or preventable;
- An event caused by human activity that is unlikely to recur at a particular location or a natural event; and
- Is determined by the Administrator in accordance with the Exceptional Events Rule to be an exceptional event.

Affects Air Quality

For an event to qualify as an exceptional event, the state must show that the event affected air quality. This criterion can be met by establishing that the event is associated with a measured exceedance in excess of normal historical fluctuations, including background, and there is a causal connection between the event and the exceedance. The demonstration of a clear causal relationship is necessary to establish that the event affected air quality and is also a separate requirement.

The State, through the District's "Natural Event Documentation, January 4, 2008, Bakersfield, California," provides the required information to establish a causal connection between the high winds and the high concentrations recorded at the Bakersfield monitors. The State's documentation includes meteorological data showing a clear correlation between increasing wind speeds and increasing hourly PM-10 concentrations at the monitor. The documentation also includes numerous news accounts of the dust storm which occurred in the Bakersfield area on January 4, 2008. The State also demonstrates that the measured exceedance on January 4, 2008 was in excess of normal historical fluctuations. See discussions below.

Is Not Reasonably Controllable or Preventable

This requirement is met by demonstrating that despite reasonable and appropriate

measures in place, the January 4, 2008 wind event caused the exceedance. During this event there were no other unusual dust-producing activities occurring in the SJV and anthropogenic emissions were approximately constant before, during and after the event. In addition, the State shows that reasonable and appropriate measures were in place. See State's documentation, Section 6.0, page 17.

Was a Natural Event

Ambient particulate matter concentrations due to dust being raised by unusually high winds will be treated as due to uncontrollable natural events where (1) the dust originated from nonanthropogenic sources, or (2) the dust originated from anthropogenic sources within the State, that are determined to have been reasonably well-controlled at the time that the event occurred, or from anthropogenic sources outside the State. See 72 FR at 13576. In the preamble to the EER, EPA also explains that "[s]tates must provide appropriate documentation to substantiate why the level of wind speed associated with the event in question should be considered unusual for the affected area during the time of year that the event occurred." *Id.* at 13566.

On January 4, 2008 the wind entrained dust originated from anthropogenic sources within California, *i.e.*, from usual dust generating activities such as agricultural and industrial operations. See State's documentation, Section 6.0, page 17. With respect to the wind speed, EPA concurs with the State's demonstration that the wind speeds in the central SJV were high on January 4, 2008. Meteorological data shows that the daytime winds in Bakersfield reached speeds of 18 - 32 mph between 8:00 am and 11:00 pm PST. Wind gusts during this same time ranged from a low of 29 mph to a high of 41 mph. See Table 2, page 10 of the District document "Natural Event Documentation, January 4, 2008, Bakersfield, California," February 22, 2008. Based on previous demonstrations the District has developed to document high wind exceptional events, a threshold hourly wind speed of 18 miles per hour is sufficient to entrain and suspend dust into the atmosphere. See 73 FR 14696, March 19, 2008, footnote 12.

Is Determined by the Administrator to be an Exceptional Event

The State has met the procedural requirements of the rule including flagging of the data, submission of demonstration, evidence of the public opportunity to review and comment on the demonstration and mitigation requirements. The State has also met the technical criteria in the Exceptional Events Rule. Therefore, we believe it is appropriate for EPA to concur with the State's determination that an exceptional event, *i.e.*, a high wind event, occurred resulting in the exceedances on January 4, 2008.

Causal Connection

The State has clearly shown a connection between the high winds which occurred in Bakersfield and increased levels of PM-10 recorded at the Bakersfield Golden State Highway monitor on January 4, 2008. Winds throughout the State were high on this day, associated with a Pacific storm front that was passing through interior central California.

Table 2 on page 10 and Figure 2 on page 11 of the State's documentation show that until about 6:00 am PST on January 4, 2008 both hourly PM-10 concentrations and hourly average winds were relatively low. Beginning between 8:00 and 9:00 am PST the winds in Bakersfield began to increase as did the hourly PM-10 concentrations recorded at the continuous PM-10 sampler operated by the District in Bakersfield. While most other areas of the State also received significant amounts of rain, the area around Bakersfield only experienced sporadic light rains, around 4:00 pm and 8:00 pm PST. The effect of the rain on suppressing the amount of PM-10 entrained by the wind is supported by the fact that after these short rain showers PM-10 concentrations began to decrease.

Concentration was in Excess of Normal Historical Fluctuations

The 338 $\mu\text{g}/\text{m}^3$ 24-hour average concentration recorded at Bakersfield Golden State Highway on January 4, 2008 was the highest 24-hour average concentration recorded at this monitoring site in 17 years. See State's documentation, page 19. EPA has reviewed the data record from this monitor for previous air quality actions and has found that the previous highest concentration recorded at this site, based on data recorded from 1993 to 2007, was 212 $\mu\text{g}/\text{m}^3$. See Figure 1, attached below. This would indicate that the concentration recorded on January 4, 2008 was clearly outside the normal range of data normally recorded at this site.

The "But For" Test

To qualify as an exceptional event the State must also demonstrate that there would have been no exceedance "but for" the event. To meet this "but for" requirement, the State first shows that there were no unusual anthropogenic activities occurring in the affected areas in the Valley that could have resulted in the exceedances. Specifically, the documentation states activities that generate anthropogenic PM-10 were approximately constant in the Valley immediately before, during and after the event. Activity levels in the SJV were typical for the time of year and PM-10 emission control programs were being implemented, not only for fugitive dust-generating activities, but also agricultural burning and residential wood combustion in parts of the SJV.

Examining the make-up of PM-10 on this day using PM-2.5 data collected at the site with a continuous PM-2.5 analyzer, we can see that coarse particles, or PM-10-2.5, which are associated with windblown dust, represented 90% of the total PM-10 mass collected at Bakersfield. ARB studies indicate that at this time of year, fugitive dust generally contributes less than 20% of the total PM-10 mass. The atypical contribution of fugitive dust to the exceedances recorded on January 4, 2008 indicates that but for the wind event these exceedances would not have occurred.

Finally there were reasonable and appropriate measures in place to control PM-10 in the SJV on January 4, 2008, Regulation VIII and Rule 4550. Moreover, EPA has approved the District's BACM demonstration for all significant sources of PM-10 in the SJV as meeting CAA section 189(b)(1)(B). The District's Natural Events Action Plan,

also addresses the reasonable and appropriate measures that the District has implemented to address high wind events in the SJV.

Based on the weight of evidence presented, EPA concludes that the State's documentation demonstrates that the exceedances at Bakersfield on January 4, 2008 would not have occurred but for the wind event on this day.

Reasonable Measures

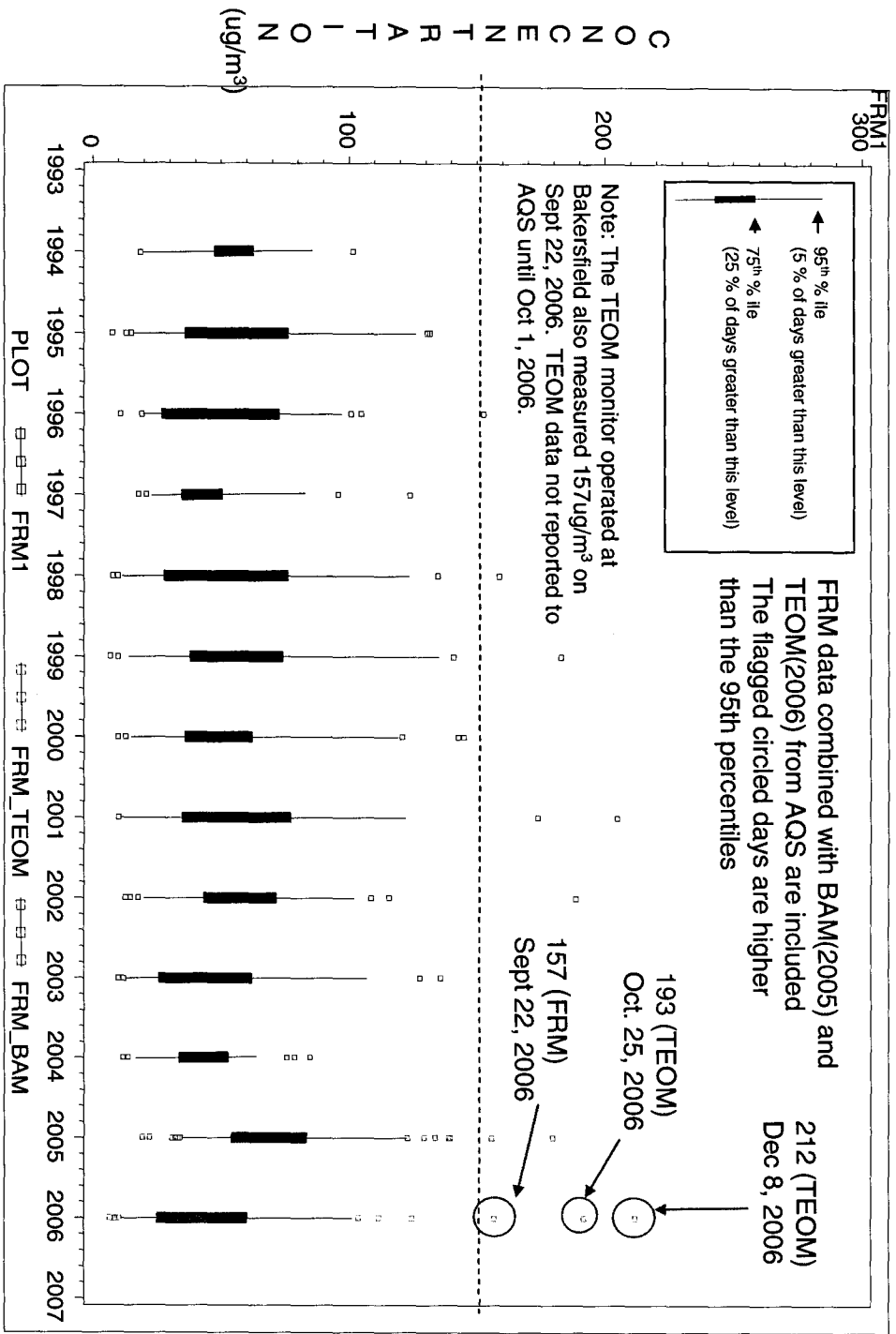
As stated above, the District has implemented numerous regulatory measures to control emissions from fugitive dust sources. The District has educated the public on the effects of air pollution through its on-going public education programs (details available at the District's website www.valleyair.org). The District also provides air quality forecasting and real time ambient air quality data through its website.

The National Weather Service issued a high wind advisory on January 4, 2008. Numerous news media outlets also reported on the high winds as they were occurring on January 4, 2008.

Conclusion

EPA believes that the high winds which occurred in the southeastern SJV on January 4, 2008 were an exceptional event as defined in 40 CFR 50.1(j). EPA also believes that the State has provided a sufficient weight of evidence demonstration to show that these high winds generated significant levels of PM-10 in the area of Bakersfield which caused an exceedance of the 24-hour PM-10 NAAQS at the Bakersfield Golden State Highway monitor. The documentation for January 4, 2008 submitted by the State demonstrates that but for the high winds in the southern SJV, the Bakersfield monitor would not have exceeded the 24-hour PM-10 NAAQS. Because EPA believes that the State has satisfied the provisions of the Exceptional Events Rule, EPA is concurring with the State's request to flag this exceedance as due to an exceptional event.

Figure 1. Annual Peak Day PM10 Concentrations at Bakersfield



March 6, 2008, Source: EPA Air Quality System (AQS) Database, San Joaquin Valley APCD